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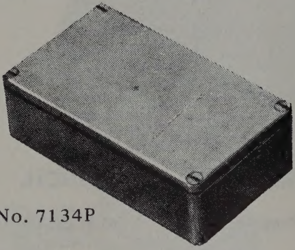

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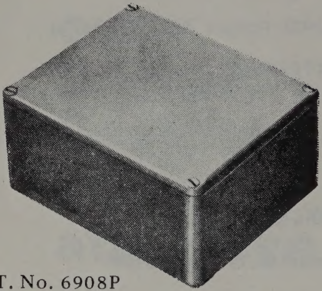

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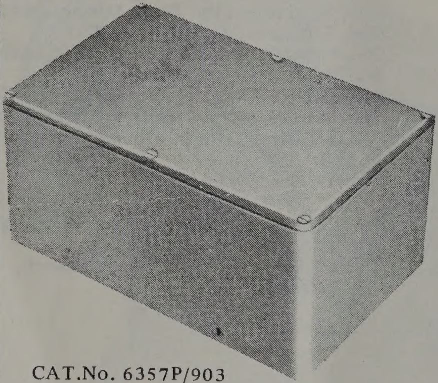

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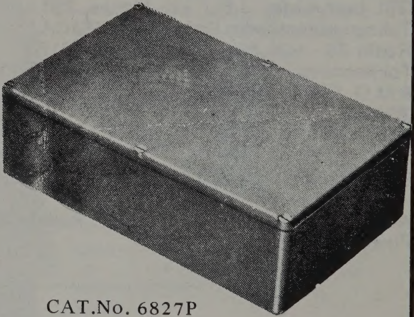

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Johannesburg Branch Issue.

This Bumper Edition of ZS comes to you through the efforts of Johannesburg members who have contributed these articles, and many more which will be printed in a subsequent edition.

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Cover/Voorblad:

JOHANNESBURG BRANCH S.A.R.L. COMMITTEE
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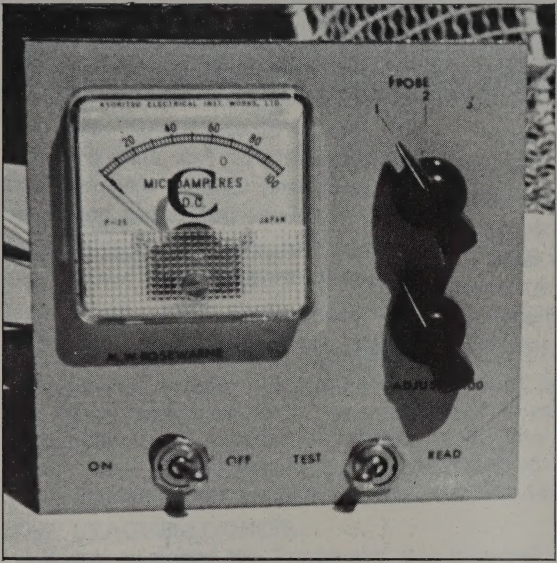


By Ted Rosewarne ZS6WI

An interesting project which can be tackled by the Non-technical Amateur.

Like S meter reports, temperature reports given by many radio amateurs are meaningless.

Indoor temperatures do not convey much information except possibly the comfort of the shack.

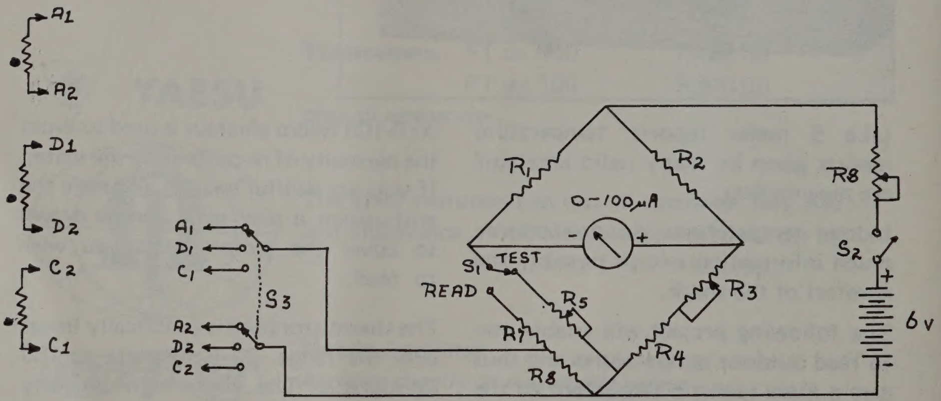
The following project will enable you to read outdoor temperatures and thus give a more realistic assessment of the weather. It is based on the characteristic of a thermistor which lowers its ohmic resistance with a rise in temperature. This relationship is inversely proportional and over a limited range of temperature a linear scale can be used with a high degree of accuracy. The circuit is the well known Wheatstone bridge with a thermistor in one leg. Change in resistance of the thermistor unbalances the bridge and gives a forward reading on the meter. Provision is made to zero the meter at 0 Centigrade or if so desired at a lower temperature. Similarly the maximum can be set higher than 100 if required.

At 0-100 micro amateur is used to avoid the necessity of re-calibrating the meter. If you are skillful enough and have the enthusiasm a new scale can be drawn to cover the temperatures you wish to read.

The thermistor used is practically linear over the range -20 Centigrade to 150 Centigrade. The slight non linearity of the thermistor is padded out by connecting a resistor in parallel, and one in series with this combination in the variable leg of the bridge. Provision is made to check and reset the instrument if necessary to compensate for battery variations. In the interests of accuracy and long term stability, high stability resistors were used. Although not necessary a double pole 3 way switch was incorporated to read temperatures at widely spaced points. Using ripcord the temperature can be read at several hundred feet without introducing errors. The thermistors were mounted in test tubes to make them weather proof. Four penlight batteries giving 6 volts were used. At this voltage no heating of the thermistor was noted although it may te tempting providence to exceed this value.

CALIBRATION

To calibrate the instrument it will be necessary to have the lowest and highest reference points as determined by a mercury thermometer or other accurate thermometer. With the thermistor probe in melting ice at 0 centigrade and switch SI in the "READ" position adjust R3 to zero the meter at 0. Now place the probe in boiling water at 100 centigrade. If you do not live at sea level where water boils at 100 centigrade, the temperature can be raised by adding salt or sugar to the boiling water. Adjust R8 to give 100 centigrade reading on the meter. Without altering the setting of R8 switch SI to "TEST" and adjust R5 to give the same meter reading of 100.



This "TEST" position will provide a means of checking the instrument and if necessary to re-set to compensate for a drop in battery voltage.

To use the instrument, switch on S2. Switch S1 to test and adjust panel control R8 to obtain a meter reading of 100, switch SI to "READ" and read the temperature. For clarity 0 and 100 have been used as the lower and higher reference points but any range between – 20 and +150 can be read by re-calibrating the meter

The photographs show the general layout and construction.

COMPONENT LIST
SI S.P.D.T. Toggle switch
S2 S.P.S.T. Toggle switch
S3 2P. 3T. Rotary switch
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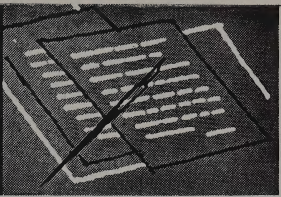
Battery 4 Penlite in series
Meter 0 ∸ 100 micro amp
R1 1.5K High stability resistor
R2 1.5K High stability resistor
R3 100 Variable Wire Wound
R4 620 ohm High stability
R5 1K Variable Wire Wound
R6 390 ohm High stability
R7 390 ohm High stability
R8 2.5K Variable Wire Wound

letters to the editor



PORT ELIZABETH,
18th July, 1969.

The Editor,
RADIO ZS,
Cape Town.

Dear Sir,

I feel that the time is opportune to place before you a few suggestions – somewhat radical – regarding the affairs of the South African League. At the outset may I say that I bear no personal animosity and that my proposals should be regarded – I hope by all your readers – as constructive. What I have to say should not be construed as ungracious for I have many radio friends whose feelings I would not like to hurt.

THE LEAGUE COUNCIL:

Many years ago the Presidency was divorced from the Chairmanship of the Council. There is much to commend this and I submit that it should be re-introduced, the appointment in each case to be for twelve months. It is my opinion that the President of the League should be a man holding high office in South Africa such as –

(a) The Minister for Posts & Telegraphs
(b) The Chairman of the S.A.B.C.
(c) The Managing Director of the I.D.C.

who should deliver an Annual Address to us at some suitable venue and the address thereafter published in RADIO ZS for the information of all our members.

The time is also propitious for a member of Council to be entrusted with the duties normally associated with a Public Relations Officer for the express purpose of promoting the image of the League throughout South Africa. Reasonable funds should be made available to him for this purpose.

THE ANNUAL GENERAL MEETINGS OF THE LEAGUE:

There is no doubt that the ever-spiralling costs connected with an A.G.M. materially deplete the League's resources. I see no good 'business' reason for holding the A.G.M. in various parts of South Africa and submit that it should be held in Cape Town, where Council is established and that the proceedings should last for one day only, and not necessarily at Easter. An immediate saving in transport and accommodation costs will be realised. Further – if so desired – Branches should be encouraged to elect a member (resident in Cape Town) to represent them.

RADIO ZS

I believe that Radio ZS in its present form is not fulfilling its purpose for I have heard – during the last two years – unfavourable criticism, with special reference to its size. Costs of Production, Circulation, etc. are high and in the interests of economy I recommend that it be reduced to a quarterly publication of say 48 pages. Model answers to the half-yearly examinations questions set by the Postmaster General should be a regular feature.

THE ERECTION OF VHF BEACONS IN SOUTH AFRICA

The time has surely arrived when VHF Beacons transmitting on the 50 MHZ band should be established in the larger centres such as Cape Town, Durban and Johannesburg. The erection of such beacons (capable of modification to 70 MHZ at a later date) is indicative of progress. I am unable to estimate the capital required for such a scheme at this stage, but feel confident that there are electronic companies in South Africa and League members who will contribute financially or in kind towards such a project.

Yours sincerely,
F.E. JOHNSTONE – ZS2KS.

For the information of our readers, the pre-war constitution and Rules, printed in 1933, made provision for the election of a Council by the members of the League. Council elected its own Chairman and was enpowered to appoint all or any of the following honorary office bearers:—

Patron, President and Vice-Presidents of the League. It is of interest that the first Chairman of Council under that constitution was also appointed as President and that this practice continued until a new constitution was introduced in the post-war years. This new Constitution printed in 1951, which is our present constitution, made this procedure obligatory. EDITORIAL COMMITTEE.

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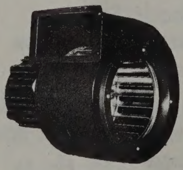

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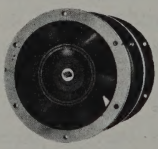

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*ZS1AR	C. de Villiers, 28-17th Avenue, Boston Estate, Bellville, Cape.
*ZS1C	De Wet Schonken, c/o Monis of Paarl, Paarl.
*ZS1EC	C. McCormick — delete — see ZS6EC.
*ZS1PO	A.H. Heunis, Thierrystraat 6, Stellenbosch, K.P.
*ZS1WI	A.B. Greyling, 12 Desmain Court, Dessie Road, Plumstead, Cape.
*ZS1YN	Mev. H.M. Burger, Posbus 25, Niewoudtville.
*ZS1ZR	G. Gould — delete — see ZS6ZT.
*ZS2FB	Fred A. (Oom Fred) Basson, 45 Cypress Grove, Graaff-Reinet.
*ZS2FW	F.W. Unstead — delete — see ZS5WU (Radio ZS, May 1969) amendment.
*ZS3C	Ian N. Sutherland, P.O. Box 951, Walvis Bay, S.W.A.
ZS4AL	W.A. (Bill) Rothero, Posbus 322, Bloemfontein.
*ZS5B	Maurice R. Timm, Flat 308, Oribi Village, Pietermaritzburg.
*ZS5BU	Rev. H.F. Yule — silent key — deceased.
*ZS5ID	Maurice R. Timm, Flat 308, Oribi Village, Pietermaritzburg.
*ZS5II	O.W.J. Gladwin, Tugela Beach, P.O. Mandini, Zululand.
*ZS5KY	D.E. Puren, 10 Hornsea Place, Wentworth, Durban.
ZS5NN	J.A. Smithies — silent key — deceased.
*ZS5NQ	H. Clelland, 192 Cooper Street, Greytown, Natal.
ZS5RF	R.A.F. Farquharson, 6 Alexander Drive, Winton Park, P.O. Gilletts, Natal.
*ZS5RV	C.A.J. Burger, Posbus 36, Wesselsbron, O.V.S.
*ZS5WW	J.J. Wesselo, P.O. Box 53, Umhlali, Natal North Coast.
*ZS6A	Major W.H. Browning, 01 Arton Mansions, 56 Webb Street, Yeoville, Joburg.
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*ZS6AHE	Dave Fingleton is correct — not ZS6AHD.
*ZS6AIN	C.P. van Rooyen, Perseel 336, 8ste Laan, Bredell, Kempton Park.
ZS6AJW	Denis N. Ansley, 2 Orchid Road, Primrose Hill, Germiston. (incorrect in (incorrect in Radio ZS for May issue).
*ZS6ALD	W.A. (Bill) Rothero — delete — see ZS4AL.
*ZS6ASQ	S.H. Hurwitz, 42 Upper Park Drive, Forest Town, Johannesburg.
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*ZS6BDO	L. Cooper, 4 Penjan, 7 Starr Road, Selcourt, Springs, Tvl.
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*ZS6FB	A.F. Otte — silent key — deceased.
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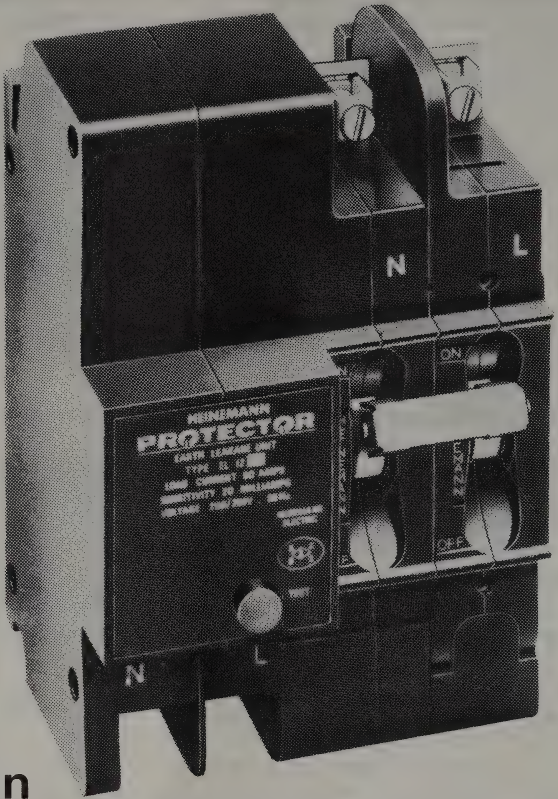
*ZS6VY	C. Petropoulos, 2007 "Tygerberg", Primrose Terrace, Berea, Johannesburg.
*ZS6WD	D. Wiggins, 42 Barbara Road, Marlands, Nr. Primrose, Germiston, Tvl.
*ZS6WW	J.J. Wesselo, P.O. Box 53, Umhlali, Natal North Coast.
*ZS6ZT	G. Gould, P.O. Box 1257, Johannesburg.



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DEATH IN THE SHACK

by John Cullum ZS6HR

It was one of those beautiful late summer Sunday mornings, the sun shone brightly and outside in the neatly tended little garden, the birds were singing their early morning song as Harry Belmont busied himself in the kitchen making tea. Harry, a big, balding, kindly natured man pushing fifty, had lived in this home for over twenty years. It was close to his work and he had learnt ot love this quiet Eastern suburb of Johannesburg. Putting in one and a bit spoons of sugar for his wife and two for himself, he carefully carried the two cups through to the bedroom.

"Here you are, Ellen," he said as she propped herself up on one elbow and ran her other hand through tangied blonde hair.

"Thank you Harry dear, you do spoil me."

Seated at the foot of the bed, Harry sipped his tea.

"Ellen, did you buy that green paint? I must finish those garage doors".

"Yes dear, I got two quart tins and they are in the garage."

"Fine" said Harry, "I'll get on with that job immediately after breakfast. Gosh! , ten to seven already and I promised the boys I would join them on forty at quarter to. Excuse me dear, I must run."

Harry hurried out to his shack, a pretty little room on the east side of the house. It was his eldest daughter's bedroom before she married and went to live in Durban. Drawing the curtains and opening a window, he whipped the dust sheet off his rig and switched on, noting that all was as he had left it the previous day on 7050 kc's.

"I should have switched on before I made the tea," he muttered. A touch of the tuning control and there was old George from Springs.

"ZS5XX and the group, this is ZS6T. Good morning Alan, you are five and nine here and 88's to Elsa. Good morning to you Harvey and I hope young Martin is better, nice signal old man, five and eight to nine. Good morning to Arthur and Maisy, your usual robust signal, Arthur. I wonder where old Harry is, he said he'd be on early this morning. Still between the sheets I suppose but I'll give him a chance. Harry, are you there you old loafer? "

With a smile Harry pressed the button on his mike and said, "A very good morning to you George and 88's to Doris. Sorry George, I woke up a bit late. Good morning to all the others on frequency and back to you George". As he put the mike down, Harry noted the time was 6.59 a.m. and entered this in his log. His eyes strayed to the volt meter and saw the voltage was beginning to drop back a bit as it did at this time of the morning. He reached over to adjust the variac.

Meanwhile the Sunday morning net went the rounds with the usual weather reports and little items of personal interest. Soon it was Harry's turn again. "ZS6QQ, this is ZS6ZC and the group standing by, come in Harry". But Harry did not come in and after a pause he was called again. "Harry, you have been called in, do you copy? " Again silence except for static noise.

In came George again, "I suppose Harry has been called away for a 'phone call or something and he'll be back soon, you take it Dan". Half an hour later, Harry had still not come back and George said he would 'phone and find out if he had rig trouble.

Back in Harry's kitchen, Ellen was busy cooking bacon and tomatoes when the 'phone rang shrilly. Wiping her hands and pushing the pan to one side of the stove, she stepped into the front hall and picked up the phone. "Mrs. Belmont here, good morning".

"Hallo Ellen, this is George, where is Harry?

"Hallo George, you caught me cooking his breakfast. He's in the shack, George, I'll call him for you".

"Thanks Ellen, we heard him on the air about half an hour ago but nothing since. Please slip in and ask him what's wrong".

"O.K. George, hold on and I'll come back and tell you". With a quick peep in the kitchen first, to see all was well, Ellen stepped down the passage and opened the shack door saying, "George is on the phone dear, he .... then her voice cut off with a choke, her hands went to her throat and her eyes widened with fear and horror. Sprawled across the desk, one arm stiffly out flung resting on the rig, head oddly angled to one side ....

Most of us hams have had an electric shock at some time and the fact that we are alive to tell the tale is not due to any cleverness on our part nor to our physical strength but only to a great deal of good luck. We just were not earthed too well, or we were jerked off contact before fatal harm was done. The human body with all its nerve and muscle activity is essentially electrical in its functioning with voltages measured in micro volts. Electrocardiograph tracings are representative of this electrical activity.

The human mechanisms which carry these minute voltages are delicate in the extreme and when any high voltages are super-imposed they are severely disrupted, often irreparably. Electrocution results in the disruption of cardiac and respiratory control mechanisms with cessation of breathing and heart beats. Cerebral or brain function is lost, with unconciousness supervening. At the moment of shock there is a single violent muscular spasm with contraction of limbs often so violent that bones are fractured and joints dislocated. The face can be so contorted as to be unrecognisable. Where high amperage is involved there is local burning of the flesh and with ultra high voltages a whole limb could be coagulated into a solid mass. People with any kind of heart disease are more susceptible to death from electric shock because their hearts are more sensitive to such stimulus.

The treatment in the case of electric shock is first to isolate the patient from the current source, then because respiratory arrest is more common than cardiac arrest, apply mouth to mouth artificial respiration which can often be life saving. Where there is cardiac, that is, no heart beats, external cardiac massage is needed and details can be obtained from any good first aid book. A defibrilation unit might be needed. In cases of emergency, a good hefty punch under the heart can sometime shock the heart muscles loose and get the heart beating again.

When a person makes contact with an electrically live appliance, the supply of electricity must be disconnected be-

fore the current through the body reaches a dangerous level. According to S.A.B.S. standards and the opinion of world experts, the human body can stand currents up to about 25 mils flowing about ten seconds, and larger currents for a correspondingly shorter time. Where these limits are exceeded, damage is caused and can culminate in death.

No matter how careful we try to be there is, for us hams a grave risk that one day we may receive a lethal shock. Human nature is fallible and familiarity does induce a degree of carelessness.

How can we best protect both ourselves and our loved ones, especially the children? Fortunately there is an easy, simple and inexpensive answer: Instal a Current Balance Earth Leakage protection unit between your rig and its power source.

The minimum body resistance is about 500 ohms so that at 250 volts, the maximum body current is 500 mils. The maximum time an average human can pass this current is .15 seconds. A good earth leakage unit will trip the breaker in .03 seconds at this earth leakage current and will trip whenever the earth leakage exceeds 20 mils.

Principles of Operation
The unit is based on the principle of current balance. In any piece of electrical equipment in good condition, the currents in the live and neutral conductors are equal and opposite. A current transformer placed around these conductors will have no voltage induced or current flowing in the secondary winding.

See Fig. 1
If the equipment is earthed and the insulation is low, some of the load current will flow to earth instead of returning through neutral. This current is called the Earth Leakage Current. Since only the live and neutral conductors pass through the current transformer, the currents in the live and neutral conductors are no longer balanced and do not cancel. This out of balance Earth Leakage current induced a coltage in the secondary of the current

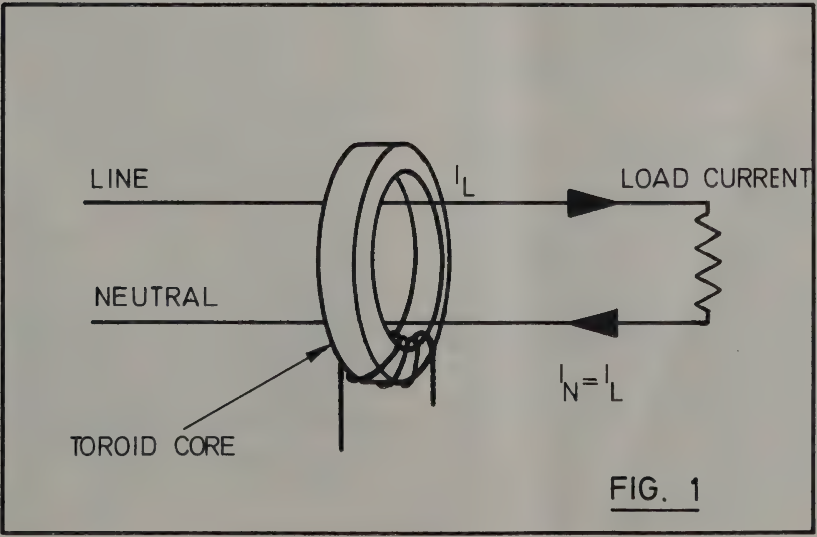


FIG. 1

transformer which is used to operate the unit.

Attractive and compact, the unit is only 6" x 6$\frac{1}{4}$" x 3" deep. Installation is simple and takes only 30 minutes or so. I have used one on test in my own shack for the past three months and it has proved 100% reliable and effective. It has never once tripped except when an earth leak has been caused deliberately for test purposes. It is fully guaranteed and has been tested and approved by the S.A. Bureau of Standards. The use of this type of equipment is now compulsory in a number of South African municipalities.

In conclusion: This unit is a real life saver and offers us hams protection against the very real hazards that face us in the use of our equipment.

The normal retail price for a unit of this nature is R23.50. However, by special arrangement with the authorised stockists, a very substantial price reduction is available to members of the S.A.R.L. on the basis of collective orders. In order to obtain this benefit for league members, orders should be sent to:

S.A.R.L.
P.O. Box 2327,
Johannesburg.

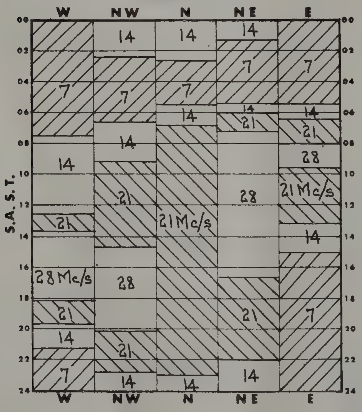
FREQUENCY PREDICTION CHARTS

AMATEUR FREQUENCY BAND SELECTION CHART

FOR CIRCUITS OF LENGTH 6000 MILES

IN DIFFERENT DIRECTIONS FROM JOHANNESBURG

AUGUST, 1969

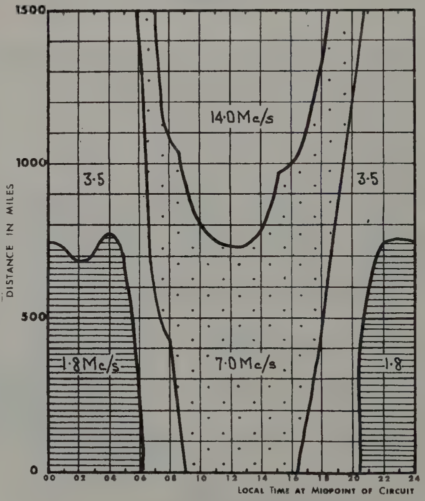


NATIONAL INSTITUTE FOR TELECOMMUNICATIONS RESEARCH,
C.S.I.R.

AMATEUR FREQUENCY BAND SELECTION CHART

FOR SOUTHERN AFRICA

AUGUST, 1969



NATIONAL INSTITUTE FOR TELECOMMUNICATIONS RESEARCH,
C.S.I.R.

RESONANT IMPEDANCE AND FREQUENCY MEASUREMENT

— J.F. van Hoogstraten, ZS6-191/7P8AJ

A commercially built version of the instrument described here.

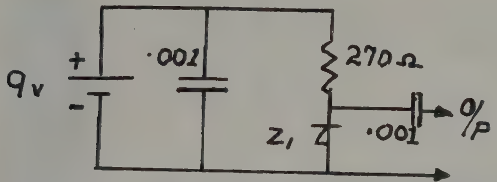
Conventional methods of determining the resonant frequency of Antennae and coax feeders can be rather time consuming and frustrating. Amateurs who are lucky enough to possess a G.D.O. and an antenna bridge are in the minority. The average amateur relies on hit-and-miss methods or on handbooks giving him details.

A method which has been extremely successful in measuring resonant frequency and impedance of aerials and feedlines is described in the following paragraphs.

1 Firstly, we must consider what type of test equipment we could use under normal conditions for the tests. We would need:

1. a wide range frequency generator,
2. a sensitive detector,
3. a means of obtaining direct readout of results.

The most common frequency source is of course a signal generator, but this can be a costly piece of equipment. However a simple way of obtaining a wide range frequency generator is to generate "white noise". "White noise" is the name given to a frequency generator which simultaneously generates frequencies from D.C. to several hundred megahertz. It is a simple matter to design a circuit which will give us this "white noise" output covering a band of frequencies well into 200 MHz. The circuit is given below: *See Fig. 1.*



Z1: ZENER DIODE 6v

FIG 1

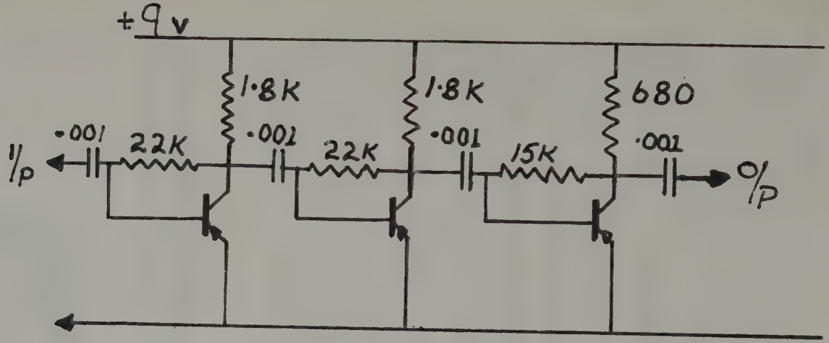


FIG 2

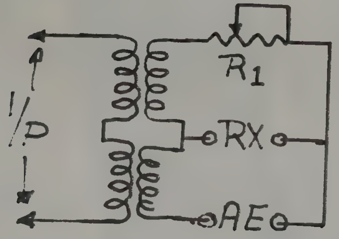


FIG 3

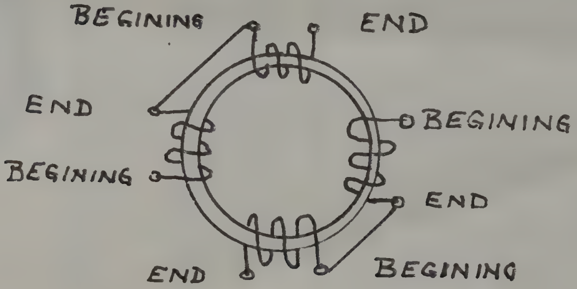


FIG 4

Since the "white noise" output is of very low amplitude we must amplify this up to a useful level of, let us say 100 uV, or enough to obtain an "S" meter reading on a receiver of 59 + 20db. One form of wide band amplifier is shown below: *See Fig. 2.*

We now have our wideband frequency generator, the next requirement is to design some sort of direct reading detector indicating frequency. This piece of equipment most amateurs have in the form of their receiver. The Rx acts both as a detector and direct frequency indicator.

The last item we must design is a device which will indicate impedance. The circuit is in the form of a bridge shown below: *See Fig. 3.*

Output from the wide band amplifer is connected to the primary of the Wheatstone R.F. bridge. Secondary connects to our Impedance direct readout potmeter R1, Rx and AE or output terminals. To calibrate the potmeter place an accurate ohm meter across the Rx terminals, making sure that there is no connection across the AE or output terminals. Rotate the pot to one end, a reading of 0 or 100 will be indicated on the ohm meter. Reduce the potmeter reading on the ohm meter by 10Ω steps, and mark off these positions. Repeat this for the whole range of the pot.

I feel I should give you some idea as to the construction of the RF bridge. There are several well known companies who manufacture ferrite toroids which will work up to 200 Mc/s. The toroid I used had an internal diameter of $\frac{1}{4}$ " height $\frac{1}{8}$ " and outside diameter of $\frac{3}{8}$ ". Cut four equal lengths of No. 28 SWG enamelled copper wire and twist them together to form one multistranded length. Wind 5 turns of this twisted multistranded wire on to the ferrite toroid. By means of an ohm meter identify the four lengths of wire. Check also that there is no short between the four wires. Leave about one inch of wire at each end of the coil, cut off the excess. Clean off a small amount of the enamel at the tip of each wire. Select a pair of wires, connect the beginning of one wire to the end of the second thus placing the two-windings in series. Repeat this procedure for the second pair of wires. We should now have two windings isolated from each other. The circuit is as follows: *See Fig. 4.*

The centre of one winding will go to the Rx terminals, the beginning of this winding to the 100 potmeter, the end of this winding to the AE terminal. This completes the construction of the unit.

To test the unit connect an Rx to the Rx terminal by means of a coax cable, place a 75 Ω or 50 Ω resistor accross the AE terminals, rotate the potmeter and a null should be reached when the pot indicates the value of the resistor.

To measure the resonant point of an aerial set the potmeter to the impedance of the coax i.e. 50 Ω connect the feeder to the AE socket on the noise unit, and the Rx to the Rx socket. Tune the receiver over the band to which the AE has been designed, a null should be present. If not, note which way the S meter starts to drop, if at the high frequency end of the band, the AE is too short, if at the low frequency end of the band the AE is too long. If a null is obtained leave the Rx tuning at this frequency and try to obtain a deeper null with the potmeter on the noise unit. If a deeper null is obtained at another potmeter reading other than the impedance of the coax this means that you have mismatch at the aerial. Note this value of potmeter reading. The SWR can be calculated from this reading i.e. coax impedance is 50 and a null is obtained at 75 or 35, this will give a S.W.R. of 1.5:1, for a SWR of 2:1 the pot will either read 100 or 25.

Where the maximum null occurs the frequency indicated on the RX will be the resonant frequency of the aerial system. For multi frequency aerials a null should be obtained for each working frequency.

As you can now see, it is a simple matter to obtain the resonant frequencies of aerials and also the S.W.R. without burning out that final valve. A commercial unit is obtainable from the U.S.A. for about $24 and is advertised in QST. This unit is also obtainable in S.A.

Other examples of the noise box use in ham radio is checking baluns, coax line resonant lengths i.e. $\frac{1}{4}$ or $\frac{1}{2}$ wave length. To check a balun of ratio 4:1 place a 200 Ω resistor on the high side of the balun and the low side to the noise unit. A null should be obtained at the 50 Ω potmeter point. The frequency that the null changes is the edge of the baluns 4:1 working range.

I hope that those amateurs who have in the past been afraid to "play" with aerials will now be able to know exactly what their aerial is doing under working conditions and will be tempted to adjust where necessary. For the aerial fundi this box of tricks can save hours of fruitless labour when attempting to resonate a new aerial. I hope that those of you who will attempt to construct one of these noise boxes will have as much fun out of trying out new aerial systems as I have had.

Silent Key

It is with great regret that we announce the passing away of that well beloved old timer "Padre" Yule, ZS5BU, an Honorary Life Member of our League. His passing leaves another gap in the ranks of the old timers who helped to build up true ham spirit among our members and indeed among all with whom he came into contact. From our records he joined the League in 1928 shortly after taking up his ministry in Durban. Licensed as ZU5B his call sign appeared frequently in the columns of "QTC" of those early days, both as a DX operator and in local affairs. Those of us who were privileged to attend the Dinner at the last AGM will remember him for delivering the Grace on that occasion and the Toast to Absent Friends and for this appreciation of our tribute to his birthday. Ham Radio and in particular our Durban Branch have lost a true and lovable friend. On behalf of our members we offer our sincere sympathy and condolences to his wife, Dorothy and his family.

MONDAY NIGHT at 7.45 p.m.

This is the time for the very happy and successful Johannesburg Branch Net. Started in February this year under the able chairmanship of that genial character O.M. H.R. Day, ZS6D, the net has proved to be one of the most popular features of Branch activities. Everyone is invited to join in, not only branch members, and to date a warm welcome has been extended to stations from Divisions 2, 4, 5, Maseru, Francistown, Bulawayo and Salisbury, in addition to the Div. 6 Stations. Currently the net operates on 3780 k Hz. from 7.45 p.m. to 9.30 p.m. on Mondays. Each week an interesting subject for discussion is chosen and members are invited to air their views. A puzzle corner has been started and new projects are planned. Later it is hoped to introduce various types of competitions. All modes are used A.M. S.S.B. and C.W. So – make a date to join in next Monday at 7.45 p.m. and spend a happy evening with us.

1969 S.A.R.L. CONTESTS

Following suggestions from Pretoria and Cape Town Branches, your Contest Committee had decided to hold a field day annually, the first to be in November this year. However, at the last A.G.M. a motion regarding field days was discussed and, whilst the Durban Branch Contest Committee made its' views clear, all other Branches voted for a field day to be held in conjunction with the annual HF contests.

The proposed November field day therefore falls away and portable or field day type stations will compete in a separate section in the HF contests.

Such entrants should clearly mark logs as entries in the portable section and should confirm that only batteries or portable generators were used to supply power.

Certificates will be awarded to the highest scoring single operator portable station and the highest scoring multi-operator station. Second and third places will be awarded certificates provided a minimum of 5 and 10 entries respectively are received in the section. Multi-operator station logs should show call sign of all operators.

Contest Rules:

Period: Dates CW — 10th Aug.
SM — 31st Aug.
SSB — 21st Sept.
Time: 1400 — 1900 SAST
(1200 — 1700 GMT).
Bands: 3.5, 7, and 14 MHz
Amateur bands.

NUMBER EXCHANGE: Phone stations will exchange numbers using 5 digits. These being RS or RST followed by a 3 digit serial. Any number may be used for the first serial but thereafter the serial must increase by one for each contact.

POINTS: Five points for each contact. Points will however be deducted for errors in logging calls and serials.

MULTIPLIER: A multiplier of one for each zone worked, other than one's own zone. The zones are:—

Zone 1 — ZS1
Zone 2 — ZS2
Zone 3 — ZS3
Zone 4 — ZS4
Zone 5 — ZS5
Zone 6 — ZS6
Zone 7 — CR7, ZD5, ZE, 5H3, 7Q7, 9J2
Zone 8 — A2C, CR6, ZD9, ZS2MI, 7P8

SCORING: Total points on each band to be multiplied by zone multiplier on that band for band score. Sum of the scores for each band will be total all band score. Second contacts with the same station on one band will not score points. SWL's must show station heard, station being contacted and serial given.

AWARDS: Certificates will be awarded to the winners of each section, CW, AM and SSB for seniors, juniors and listeners. Second and third places will be awarded certificates provided a minimum of 5 and 10 entries respectively are received in the section. The following special awards are also available to ZS contestants:—

Highest Aggregate Score in all 3 Contests — HOS Trough

Highest CW Score — Silent Keys Memorial Trophy

Highest AM Score — Silent Keys Memorial Trophy

Highest SSB Score — NJB SSB Trophy

Highest Junior CW — AKYAB Trophy

Highest Junior AM — Fred Mills Trophy

Highest Single Band CW — Anon Trophy

Highest Single Band AM — Joseph White Trophy

Highest Single Band SSB — Highveld Branch SSB Single Band Trophy

Branch participating trophy will be awarded to the branch with the highest percentage of branch members submitting logs of 500 points or more. For DX contestants (i.e. all other than ZS) certificates will be awarded to the highest score in each of the CW, AM and SSB contests and to winners in each country provided a minimum of 3 logs are received from that country.

JUNIORS: For the purposes of the contest a junior is regarded as any contestant who has never previously gained first place in any section of the SARL Annual HF contests. Juniors are however eligible for the senior trophy and can not win both in the same contest

OPERATING: Contestants should not give or receive any assistance to or from other contestants.

LOG INSTRUCTIONS: Logs show time, station contacted, serials given and received, band, in that order. SWL's to show time, station heard, serial given, station to whom report given, band. All contestants are expected to compute their scores. Logs should be checked for contact duplications and proper point credit before submission. Logs should be addressed to:—

CONTEST COMMITTEE,
P.O. BOX 205,
PINETOWN.
NATAL.

To arrive not later than 14 days after the relevant contest. Judging of entries will rest with the contest committee whose decision will be final.

1969 S.A.R.L. WEDSTRYD

Wedstryd Reëls

Datums:	GG	10 Augustus
	AM	31 Augustus
	ESB	21 September
Tyd:	1400 tot 1900 SAST (1200-1700 GMT)	
Bande:	3.5, 7 en 14 Megaherz. Amateurbande.	

NOMMER RUILING: Foon stasies sal ruilingsnommers van 5 syfers gebruik. Gelykgolf stasies sal ruilingsnommers van 6 syfers gebruik; seinde RS of RST gevolg deur 'n 3 syfer volgnommer. Enige nommer mag gebruik word vir die eerste volgnommer, maar daarna moet die volgnommer deur een vermeerder word vir elke daaropvolgende kontak.

TOEKENNINGS: 5 punte vir elke kontak. Punte sal egter afgetrek word vir foutiewe loginskrywings van roepseine of volgnommers.

VERMENIGVULDIGER: 'n Vermenigvuldiger van een vir elke gebied gewerk behalwe u eie gebied. Die gebied is:—

Gebied 1 — ZS1
Gebied 2 — ZS2
Gebied 3 — ZS3
Gebied 4 — ZS4
Gebied 5 — ZS5
Gebied 6 — ZS6
Gebied 7 — CR7, ZD5, ZE, 5H3, 7Q7, 9J2
Gebied 8 — A2C, CR6, ZD9, ZS2 MI, 7P8.

TELLING: Die totale aantal punte van elke band moet deur die gebiedsvermenigvuldiger van die band vermenigvuldig word vir die vasstelling van die bandtelling. Die som van elke bandtelling sal die totale telling van

al die bande saam voorstel. 'n Tweede kontak met dieselfde stasie op een band sal nie punte verwerf nie. Luisteraars moet die stasie wat gehoor word en die stasie wat gekontak is sowel as die volgnommers noteer.

TOEKENNINGS: Sertifikate sal aan die wenners van elke afdeling toegeken word, GG, AM, en ESB, vir Seniors, Juniors en Luisteraars. Tweede en derde plek sal ook sertifikate verwerf, mits 5 en 10 inskrywings respektiewelik in die afdeling ontvang word. Die volgende toekennings is ook beskikbaar aan ZS deelneemers.

Hoogste Gemiddelde Telling in al 3 Wedstryde — HOS Trof

Hoogste GG Telling — Stil Sleutel Memorie Trofee

Hoogste AM Telling — Stil Sleutel Memorie Trofee

Hoogste ESB Telling — NJB ESB Trofee

Hoogste Junior GG Telling — AKTAB Trofee

Hoogste Junior AM Telling — Fred Mill Trofee

Hoogste Enkelband GG — Anoniem Trofee

Hoogste Enkelband AM — Joseph White Trofee

Hoogste Enkelband ESB — Hoëveld Tak ESB Enkelband Trofee

Die Takdeelnemers trofee sal aan die tak met die hoogste persentasie taklede wat logpunte van 500 of meer aanbied toegeken word. Aan DX deelnemers (d.w.s. ZS uitgesluit) met die hoogs ste telling in elk van GG, AM en ESB wedstryde, en die wenners vir elke landstreek mits 'n minimum van 3 logs vir daardie land aangebied is, sal toekennings of sertifikate ontvang.

JUNIORS: Ten tye van die wedstryd sal 'n Junior beskou word as enige deelnemers wat nog nooit eerste plek in enige afdeeling van die SARL Jaarlikse HF Wedstryde behaal het nie.

WERKING: Deelnemers moet nie hulp aan ander deelnemers verleen nie of hulp van ander deelnemers ontvang nie.

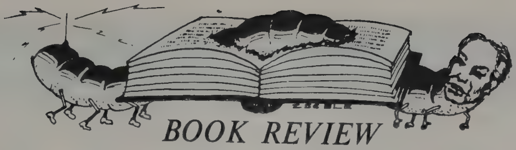
LOG INSTRUKSIES: Log moet tyd, stasie gehoor, volgnommer gegee, stasie aan wie verslag gegee is en gebied in die volgorder aandui. Van alle deelnemers word verwag dat hulle hulle tellingspunte self moet bepaal. Logs moet noukeurig nagegaan word om so doende kontak duplikasies te vermy. Dit geld ook vir die juistheid van die puntetelling voor aanbieding. Logs moet geadreseer word aan:—

DIE WEDSTRYDKOMITEE,
POSBUS 205,
PINETOWN,
NATAL.

Logs moet bogenoemde adress binne 14 dae na afloop van die betrokke wedstryd bereik. Beoordeling van die inskyrwings berus by die Wedstrydkomitee wie se besluit finaal is.

We think too, that the subscription rate of R2.30 is low for Four Editions of the 60 off page publication that is packed with information and projects to build.

The representative for the Republic of South Africa is: Bob Sutton, ZE1-CL, Box BW 127, Borrowdale, Salisbury, Rhodesia. Send him your subscription (postal order for 23/-) and if you want to build one of the projects, contact him and he will see to it that you get the necessary parts.



by Colin Duff ZS1CA

VHF—UHF Manual, by G.R. Jessop, C. Eng., Miere, G6JP.
Published by R.S.G.B.

V.H.F. or U.H.F. bands today are still largely experimenter's bands, and a considerable amount of equipment that is used, is invariably home constructed. Therefore, it is refreshing to review a manual that can cater for this type of enthusiast. This is a specialised manual for the constructor who will find a large selection of Designs from which to choose, to suit his individual taste as well as a goodly measure of basic information on general matters.

The various chapters are profusely illustrated with graphs, circuit and constructional drawings, photographs etc. and information is as up to date as one could wish for. The chapters on Transmitters, Receivers and aerials are especially interesting, full of useful information and constructional ideas. As the modern trend is towards Semi-Conductors, there are plenty of circuits for this type of enthusiast. Other chapters dealing with Propagation, Tuned Circuits, Filters, Side-Band, Mobile and Aerial Test gear and measurements are all of the same high standard.

This is a book that is highly recommended not only for the VHF enthusiast but for anyone who has the itch to construct. I't is also good value for the price is under R2.00 in the U.K.

V.H.F. NEWS

For those interested in V.H.F. there is a new publication available from Germany. It has been written for Amateurs and covers V.H.F., U.H.F. and Microwaves.

"VHF COMMUNICATIONS" is specialized in publishing exact and extensive assembly instructions for transmitters, receivers, converters, complete transceivers, measuring and auxiliary equipment, antennas etc. which can easily be duplicated. The latest advances in the semiconductor, printed-circuit and electronic technology are considered in great detail. ALL special components required for the assembly of the described equipment, such as epoxy printed-circuit boards, trimmers and coil formers as well as complicated metal parts and complete kits, ARE AVAILABLE from the publisher at most reasonable prices.

It is a quarterly publication (Feb. May. Aug. Nov.). Subscription is R2.30 per year.

We think that this publication will be of great help to those who want to enter the field of VHF. What attracts us most of all, is that all the parts are available from the publisher, and that therefore, one can always be sure that one is usïng the correct parts for the project. How often don't we have to substitute parts and then find that the whole project falls flat on its face?

Qsy foot of opposite page.

PARTICIPATION IN I.G.Y. PROGRAM

by Fred Anderson ZS6PW

During the I.G.Y. which was timed to coincide with the anticipated peak in sunspot activity in 1959, the writer participated in the American Radio Relay League program which made use of amateur radio observations of unusual propagation conditions on the V.H.F. bands.

Reception of transmissions emanating from Europe, England and the U.S.A. on frequencies as high as 49 MH_z were often possible, the quality of the signals frequently being good enough to permit the reception of recognizable pictures from the BBC television service on 45 MH_z.

Whilst reception on these high frequencies could be anticipated during a period of extremely high sunspot activity, a night-time effect was noticed which had been discovered shortly before by radio amateurs operating in the 6 metre band between South and North America and which was later also noticed between Australia and Japan, as well as between Rhodesia and the Mediterranean sea.

It had been noticed that a form of propagation existed between two zones respectively north and south of the geomagnetic equator which made possible the reception of signals on frequencies and at times which were not predicted by the recognized ionospheric theories. Because of its nature this effect was called Trans-Equatorial Propagation (T.E.P.) and reports on this phenomenon were studied and summarized by the A.R.R.L. I.G.Y. project. This proved to be one of the most useful contributions which this project was able to make to the I.G.Y. program.

Worcester lies near the southern extremity of the T.E.P. zone south of the equator and hence only signals coming in at low angles of elevation could be expected. The mountain range to the north of Worcester constituted an effective screen which stopped most of the very high frequency signals. The writer co-operated with OM Ray Cracknell, ZE2JV, in Salisbury and OM Chalky Whiting, ZC4WR in Cyprus, making nightly transmissions on 6 metres which were never heard in Cyprus. To prove that low-angle propagation was essential, a 6 metre automatic beacon transmitter was erected on the farm of the late OM Will Jelliman ZS1MZ near van Wyksvlei and operated simultaneously with the transmissions from Worcester. The beacon had an output of only 4 watts and the distance to Cyprus was almost identical to the distance from Worcester to Cyprus and yet the beacon was heard frequently whilst the station at Worcester was never heard in spite of 60 watts of R.F. into a 6 element yogi being used. The important difference between the two transmitting sites was that the beacon was situated on a hill with a clear view to the north, whilst the other transmissions took place from a site from which all low-angle radiation was stopped by the mountain range.

On the 10 metre band, however, transmission between Worcester and Cyprus was frequently possible under typical T.E.P. conditions and a series of delay-time measurements was done in order to try and learn something of the nature of this type of propagation. This was done in the following way.

The transmitter at Worcester was automatically keyed to send out C.W. at 10 dots per second, each dot lasting only about 2 milliseconds. In Cyprus OM Chalky received these dots with the B.F.O. of his receiver turned on as for normal C.W. reception. The beat note was made quite high, say 2 KH_z by appropriate B.F.O. adjustment. The bursts of audio so produced, were used to modulate his A.M. transmitter and hence rebroadcast and received back here in Worcester. The audio bursts received this end were therefore delayed (relative to the C.W. pulses which were sent out) by the time that a radio wave takes to travel from Worcester to Cyprus and back, plus of course, the delay occasioned by the various tuned circuits and filters in the two receivers and in the transmitter at Cyprus. This equipment delay was checked over a very short circuit between Worcester and Rawsonville (OM Cornie Brink ZS1KW co-operating) for which the transmission delay could be accurately calculated. Further checks on the validity of the method were carried out between Worcester and Salisbury (to OM Ray ZE2JV) which, on 10 metres, is a simple one-hop path whose single point of reflection in the ionosphere happened to be close to Johannesburg. At this point vertical incidence soundings are done by the National Institute for Telecommunications Research and information about the height of the ionosphere at the time of our measurements, were kindly supplied.

Knowing the height of the ionosphere at the point of reflection and the great circle distance from Worcester to Salisbury, the time delay to anticipate could be calculated and compared with measurements. The correspondence was good and hence it was decided that measurements to Cyprus could be trusted.

The time delay was measured on an oscilloscope by observing the distance along the time-base between the pulse sent out and the packet of audio received back from Cyprus. It was about 58 milli sec.

Since the speed of a radio wave is known with good accuracy, the path length could be calculated once the time delay was known. Knowing the great circle distance between stations and likely ionospheric heights along the circuit, a ray path geometry could be worked out to fit the observed distance covered by the signals.

Under T.E.P. conditions (characterised by a rapid and random QSB most of the time) this delay was found to become ill-defined and, if anything, to increase. When correlated with similar measurements made by ZE2JV and ZC4WR over the Salisbury to Cyprus circuit and with vertical incidence ionospheric soundings made in the tropics, it could be shown that the extended frequency range of T.E.P. and its occurrence late into the night were due to peculiar conditions prevailing in the ionosphere in the vicinity of the geomagnetic equator.

It was found that all the observed effects could be explained in terms of propagation through a disturbed region of the ionosphere. It was not found necessary to postulate the existence of extra-terrestrial propagation media to account for the observed effects.

The explanations seems to be that interaction between the earth's magnetic field and the ionized particles in the upper atmosphere, which rise after sunset, produce forces which react on the rising particles causing

Qsy page 29.

THAT S.T.S. TEAM

By One of Them.

What nostalgic memories that photograph has aroused! You know the one I mean, of course. It appeared on the cover of our January issue. What handsome lads some of us were then — but that was 28 years ago. Now old Time has taken his toll and called a fair sprinkling to the Great DX. The rest of us are well on the way!

Just look at that front row; corporals and sergeants galore, straining their right arms to display their stripes. Or have they just been vaccinated? Who'd recognise that demure looking chap on the right as Reg Green, present king-pin of the Johannesburg Branch; or the cherub keeping Willie's knees warm, as Tubby Holloway?

And just take a peek at those tough guys in the rear rows, with more stripes to the square inch than a venetian blind, and dominated by Bill Bluett on the extreme left.

Then there's the barathea brigade, looking as if it had just swiped all the cream from old Appel's larder: Frankie Tyler, Fraser Alexander, Arthur Coetzee, Bob Taylor, Wally Browning, the one and only Willie, John Hickson, Percy Vivian, and Arthur Gass. And dominating the scene in his unobtrusive but so effective way, is that priceless asset, the guide and mentor who kept us all on the straight and narrow (military-wise, of course), that incomparable Sergeant-Major, Bertie Heydenrych.

In the February issue, Willie gave a short resumè of the early history of this epic ham effort and invited further reminiscences. Of course the chap who should step in at this stage is Old George ("Joss" to all his Chinese contacts). Having launched the venture and piloted it through the maze of red tape that was DHQ in those days, he's the only one who has all the threads in his hands, but he's such a stickler for accuracy, dotting all the dits and crossing all the dahs, that we'll probably have to wait several years to get the real lowdown. In the meantime, you'll just have to be content with the light-hearted frothings of those who, like myself, stood on the sidelines and did as we were told. If the picture isn't as complete as it might be — well, just blame it on the DDAFS.

After all, it was nearly 30 years ago. How raw we all were then even though some of us had previously done a stint in the A.C.F. My "four years hard" was in the early twenties in the old Cape Peninsula Rifles. Assured that conscription was "just around the corner" and that the volunteer would have the edge on the conscript, we at U.C.T. signed on. The truth didn't take long to penetrate even our dim wits. Archie Shacksnovis, later prominent at the Bar, was our officer. We gave him and his N.C.O.'s hell, as only a private can, and when finally it was over, promptly forgot all we'd been taught.

I don't suppose any of us felt particularly belligerent in 1939, but after Munich ahd its sequel, like countless others, we felt that Hitler had to be stopped — and that was all there was to it. Rather to my surprise I found myself in the Johannesburg Platoon, having drifted there in easy stages (rather like the downward path to alcoholism, drug addiction, or bowls). Everything about soldiering seemed to have changed in the interim. Our Bertie, small of stature, stood head high shoulders above us all, every inch a soldier. And how patiently he bore with us, both officers and O.R.'s.

Our first parades were held on the University playing fields. We had no uniforms, so the problem of saluting was solved by making us all wear hats. These had to be smartly doffed when reporting to the O.C. – a particularly awkward manoeuvre for the hatless brigade.

Platoon Headquarters were in the basement of Maritime House in Loveday Street, a cold and draughty dungeon.

The Adjutant, Bob Taylor, was the first to go on full-time service. That was on the 2nd March, 1940, at the height of the Phoney War, and several months elapsed before others were permitted to follow. This delay in getting us off the ground lay, I think, in the prevailing feeling that, being "civilians", we did not measure up to the P.F.'s yardstick. Also a well-established communications organisation already existed in the Army Corps of Signals, commanded by Freddie Collins, then a Colonel. As a senior Post Office official he was able to select and recruit the cream of telegraphists and technicians. Probably it was felt that this was the orbit for anyone else who could punch a key.

Of course any ham who thought likewise – and quite understandably some did – was welcomed with open arms. Others yielded to the blandishments of the then S.A.A.F. Signals Officer, Captain Robertson, who dangled the prospect of an immediate posting northwards. One of these was Eric Lowe. His brother officers gave him a dinner at the Johannesburg station – and very resplendent he was in his smart new uniform, sporting a solitary pip on each shoulder, while the rest of us wore the old soup and fish, and secretly envied him.

For weeks we went on like this. Then Old George managed to cut through a large wedge of red tape, getting the green light for a stage by stage mobilisation of all platoons throughout the country and their concentration at the Showgrounds, Pretoria.

In the meantime recruiting had gone on apace. George, being a lawyer, saw further than most. His policy in the selection of recruits was conservative (and this, my old comrades will tell you, is a masterpiece of understatement). Every applicant completed an elaborate questionaire on his background and was carefully vetted before a decision was taken, but this paid handsome dividends. By the time the balloon really went up, the word had spread far and wide and we were absorbing the cream of available manpower. Although "laymen", these lads fitted marvellously into the picture.

Some personalities stand out vividly. There was Denley. He bounced – there is no other word for it – into the Adjutant's office to sign on, a ruddy-cheeked ball of energy. In no time he was doing a stout job in our stores, with a pip on his shoulder. Then there was Dave McComb, one of the world's great scroungers. Putting him in charge of supplies was the obvious course; and hey presto, the unit immediately acquired a fleet of vehicles (this at a time when they were just not to be had except at the behest of the very top brass). Having seen us safely launched, he sought more exciting spheres, finishing up in a red beret with a crown on his shoulder, dropping at Arnheim.

There was Sid Harsant, who took charge of our Pay Section and was a wizard at his job. At a time when Impala House was a swear word in both English and Afrikaans, and there were moans galore from unpaid erks and their families, Sid found money somewhere and kept all the S.T.S. lads happy.

One other character has a special place — Flight Sergeant Appel, (not the car graveyard Appel). This one had been a publican in Bloemfontein. He was a stout fellow, both literally and figuratively — a most unmilitary character. He took charge of the commissariat and thereafter the boys never looked back.

There were so many others but it would be wearisome and indeed impossible to bring them all to mind after so many years. Suffice it to say that one and all pulled their weight splendidly in this our war effort.

The Showgrounds at Pretoria had been selected as a suitable venue. It had space enough for parades and a number of barn-like buildings. McComb went off to Pretoria and under Wally's general direction got things humming. In next to no time he had organised some 300 double bunks. The upper deck of each was slatted, presumably to discourage bed-wetters. By the time Italy entered the war, on 10th June, 1940, the camp was well established and Platoons were reporting from all over the country. If memory serves, East London was the last to arrive.

The training programme was intensive — square bashing and signals instruction all day long. Remember that hams formed the hard core of the organisation. At the outset, their value lay in their knowledge of morse and the basics of receiver/transmitter construction and operation. (These were the days when only the select few boasted a commercial rig. The others all "rolled their own" and knew just what made them tick, but all had to master "procedure", the technique of communication between a network of stations, in vogue in the S.A.A.F.

I well remember a session in which some eight operators, representing as many stations, sat around a table. Each wore a pair of interconnecting headphones and operated his own key. Not a word was spoken at any time but for hours the exchange of "traffic" continued, facilitated by the use of procedure and recognised abbreviations. It was a most impressive demonstration.

Jack Twine, Tubby Holloway and several others formed the Maintenance Section under the direction of, I think, Fraser Alexander, and wizard feats they accomplished with the bits and pieces of junk at their disposal.

As soon as a trainee completed his course he was rushed off to an operational unit where, understandably, his performance bore eloquent testimony to the good work the S.T.S. was doing. In fact, with the high grade material available in the unit it was not long before the top brass at DHQ began to cast round for suitable types for other spheres of service. A sizeable batch, for example, was selected for commission and training as cipher officers. Soon they were lost to us but later did wonderful work dispersed throughout the operational sphere.

On the social side, as might be expected, a crop of very talented performers in diverse fields soon materialised. We had a first class dance orchestra which gave us all a great deal of pleasure. The School's bugler was also a cornettist. Every night, after "Lights Out", he rendered a verse of "Abide with Me". Coming on the still night air, with all other noises muted, it made an indelible impression both on the troops and the good Pretorians living in the vicinity, from one of whom a very moving tribute later appeared in the Star.

These were halcyon days, but alas; change was in the air. The S.A.A.F. had previously established the Electrical and Wireless School in Durban. To fuse this with S.T.S. in an entirely new organisation was a logical step, and so 64 Air School at Tempe, Bloemfontein, was born.

In due course a special train was laid on for us and in the late afternoon of 4th February, 1941, we piled in. Full marks to the S.A.R. Dinner was served in the small saloon of those days. By 11 p.m. all O.R.'s had been fed and it was the officers' turn.

By all accounts, Tempe had previously been occupied by a very tough batch of troops; consequently Command Headquarters expected bags of trouble when our train pulled in. The platform teemed with M.P.'s, all itching to get stuck in, but our Bertie had done his stuff amazingly well. Not a man left his coach before the world was given and the poor old M.P.'s bagged nothing — a most frustrating morning for them. This set the pattern of things to come. The O.C., Command, Colonel Klerck, went out of his way to pay tribute to the exemplary conduct of our lads on all occasions, and Bloemfontein then took us to its bosom in a big way.

But there was a fly in the ointment. For obvious reasons neither O.C. could reasonably be expected to stand down for the other. Command of 64 was therefore given to a third party, Frank C. Elliot-Wilson, with the rank of Lieutenant-Colonel. Those who went to Bloemfontein, and particularly the administrative staff, will remember him well. Although also a one-time ham, he lost no time in seeking to remove all trace of ham influence and tradition in his new unit. At some time or other he had been given a decoration for efficiency. I would say the award was not entirely unmerited. At any rate the old S.T.S., which had been the League's baby, and had rendered such yeoman service in the common cause, was efficiently K.O.'d almost overnight. In fact its death throes commenced on the 5th February, 1941, the day we arrived in Bloemfontein.

But its spirit lives on . . .

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continued from page 25.

turbulence. This gives rise to poorly defined reflection of radio waves and hence to our vague distance measurements under these conditions.

There is also a tendency for large volumes of highly ionized particles to form themselves into discrete bubbles or columns under the action of these forces. The curved surfaces of these volumes are able to reflect signals at a much higher frequency than the ionosphere when it is in its normal state.

Since these bubbles are rising and drifting around, the course followed by the signal is rapidly shifting and jumping from one path to the other.

Many different paths are possible simultaneously and all are suffering random changes in length.

This is very likely the cause of the rapid flutter fading and Doppler shifts noticed on T.E.P.

continued next month.

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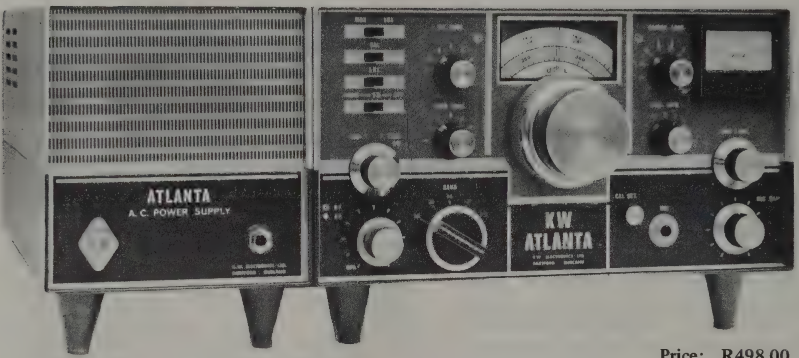

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FEATURES

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H. Q. NOTES
H. K. NOTAS

Listener Call Signs:
At the last Council Meeting the question of the inclusion of the registration numbers, names and addresses of non-transmitting members was raised in correspondence from certain members. It had been pointed out to the correspondents that the ZS Callsign Book was a list of transmitting amateurs licenced by the Postmaster-General and, as such, was not a membership list of our League, but contained details of non-members as well as members. The purpose of the Call Book was to enable our members to indentify the various calls which they heard on the air. If a list of non-transmitting or listener members was considered necessary this would be more appropriate in Branch Newsletters or as a supplement to Radio ZS.

CALLBOOK EDITOR:

As the branches which had made tentative offers at the last A.G.M. to publish future Call Books had not communicated with Council, it was decided that the appointment of the Call Book Editor could not be delayed any longer and Mr. E.H. Rhodes, ZS1R, was appointed on the unanimous vote of Council.

We wish OM Eric a very happy term of office in this thankless job.

TOEKENNINGS EN SERTIFIKATE:

OK Gawie Gerryts, ZS1VA, wat hiermee belas is, doen weereens 'n ernstige beroep op amateurs om hulle QSL kaarte asseblief in Roepsien en Sone volgorde te rankskik wanneer dit applikasies vergesel. Dit sal sodoende baie tyd bespaar in 'n afdeling wat 'n groot volume werk hanteer. Lede se saamwerking sal baie waardeer word.

1969 S.A.R.L. CONTESTS:

The Contest Committee have released details of the 1969 S.A.R.L. Contest which will be published in full in Radio ZS. Brief details are as follows:

CW section will be held on 10th August.
AM section will be held on 31st August.
SSB section will be held on 21st September.
Time from 1400 to 1900 S.A.S.T. (1200 to 1700).

Full details and list of awards and trophies can be obtained from the Secretary of the Durban Branch of the S.A.R.L.

AMATEUR RADIO OPERATOR'S CERTIFICATE EXAMINATION:

We are indebted to the Postmaster-General's office for the following information on the results of the examination for the Amateur Radio Operator's Certificate held on the 16th May, 1969.

Total Entries:	55
Number of Candidates:	48
Percentage Passed:	54%
Percentage Failed:	46%
Highest Percentage mark:	86.6%
Lowest Percentage mark:	8.3%

RHODESIAN ACTIVITIES:

We have to thank OM Bill Bluett, ZE2JS, for the following information:

ZE SLOW Morse Classes: The ZE Slow Morse Classes have commenced and have now reached the speed of five to six words per minute. Reports indicate that they are being received in South Africa.

Details are as follows:

Callsign: ZE1JBY
Frequency: 3550 Kcs., plus or minus due to QRM.
Time: 1815 to 1845 Hrs. S.A.S. Time.
Days: Mondays, Tuesdays, Thursday and Fridays.
Rhodesian holidays excepted.
Mode of Transmission: MCW.

Here is a chance for listener members to practice morse receiving. Reports on progress and reception from those copying would be welcome.

12th JAMBOREE-ON-THE-AIR:

The Boy Scout World Bureau informs us that the 12th Jamboree-on-the-Air will take place over the weekend of the 18th and 19th October. Starting time will be 0001 hours GMT on the Saturday, 18th October and the event will terminate at 2359 hours GMT on Sunday, October 19th.

NEW AND RE-INSTATED MEMBERS:

We wish to welcome the following new and re-instated members to our ranks and hope they will be with us for many years.

ZS6WD	D. Wiggens	Highveld B.
DJ3KR	Jürgens Röttger	Associate Member
ZS5NQ	H. Clelland	Pietermaritzburg B.
ZS5-082	B.K. Peckham	Pietermaritzburg B.
ZS5-090	K.N. Farren	Pietermaritzburg B.
ZS6-408	A. Mosesson	N. Joburg B.
ZS6-418	A.L. Bergmann	N. Joburg B.
ZS6BCM	C.F.P. Jordaan	T. Noord Transvaal
ZS5-007	L.J. van der Merwe	Durban B.
ZS5-014	J. Langeveld	Durban B.
ZS5-021	J.C. Van Vlierden	Durban B.
ZS5-033	K. Cusens	Durban B.
ZS5-034	XYL P.B. Cusens	Durban B.
ZS5-035	M.J. Alport	Durban B.
ZS5-037	J. Dahmen	Durban B.
Ex G3WVK	D.M. Larter	Durban B.
ZS6-283	W.C. Hill	S. Transvaal B.
ZS6-286	XYL A.C. Janse van Rensburg	S. Transvaal B.
ZS6-289	C.J. Claassen	S. Transvaal B.
Ex DJ4XW	C. Heppe	Cape Town B.
Ex DJ3VW	F. Ziss	Cape Town B.
ZS1-017	E.M. Damster	Cape Town B.
ZS1-019	A. Borgart	Cape Town B.
ZS1-021	R.E. Baker	Cape Town B.
ZS1-024	N. Ralph	Cape Town B.
ZS1AR	C. de Villiers	T. Boland
ZS1C	De Wet Schonken	T. Boland
ZS1WI	A.B. Greyling	T. Boland.
	S.D.G. Rossouw	T. Boland
ZS6-001	D. Ralph	E. Rand B.
ZS6BDO	L. Cooper	E. Rand B.
ZS6BAH	T.E. Ryan	E. Rand B.

CONTESTS

There are two contests scheduled for August this year. They are the 10th ALL ASIAN DX CONTEST and the 15th EUROPEAN (WAE) DX CONTEST.

The 10th All Asian DX Contest is open to amateurs throughout the world and takes place from 1000 GMT August 30 to 1600 GMT August 31. The Contest is for CW only and the 1.8, 3.5, 7, 14, 21 and 28 Mc bands may be used. Logs should be sent to the J.A.R.L. Contest Committee, P.O. Box 377, Tokyo Central, Japan, to arrive not later than 30 November, 1969.

The 15th European DX Contest takes place as follows: CW section from 0000 GMT August 9 to 2400 GMT August 10. Phone section from 0000 GMT September 13 to 2400 GMT September 14. All Amateur bands may be used. Logs should be sent to:

Walter Skudlarek, DJ6QT, An der Klostermauar 3, D-6471, Hirzenhain, West Germany.

The Lebanese Amateur Radio Association (RAL.) have announced a contest which offers a prize with a difference. The contest is in commemoration of the 20th Anniversary of RAL and is being conducted in co-operation with the Lebanese Ministry of Tourism, Middle East Air Lines and the Cadmos Hotel in Beirut. The contest itself is quite conventional and runs for a week from 0001 GMT October 4 to 2359 October 12, 1969. All bands may be used and both CW and Phone may be used. The difference comes in the prize offered to the overall winner which is two air tickets to Beirut from any point on the MEA route plus a free double room at the Dadmos Hotel for one week. The tickets and Hotel accommodation will be good for any time during the period 1 March through 31 August 1970.

VISITORS:

We were pleased to welcome the following visitors to H.Q. Office:

Bill Pearce	W4RWO/MM	
C.W. Vegter	ZS1UF	Bellville
Henry Comins	ZS5-036	Durban
Appie Slabbert	ZS3JJ	Windhoek
Chris Latsky	ZS6EV	ex Pretoria
S. Horwitz	ZS2-086	Graaff-Reinet
A. Lausecker	ZS5LB	Vryheid
C. Heppe	DJ4XW	Stuttgart/Germany
Friedrich Ziss	DJ3VV	ULM/Germany
B.E. Brokensha	ZS6AJY	Kempton Park
D.R. Austin	ZS6JC	Johannesburg
D.N. Ansley	ZS6AJW	Germiston
W.H. Dibble	ZS6AG	Pretoria
P. van Lelyveld	ZS6AEM	Ermelo

73,

Herman Forrer, ZS1FT.

Silent Key

It is with regret that we record the death of O.M. A.E. (Shorty) May on the 21st. May 1969, after a long and painful illness. Shorty made his last transmission on Saturday, April 26th, after being carried into his shack. One of the old timers, he got his first call sign ZT6S in 1934. In 1952 he was ZS3CN, then VQ2EW, ZE1AY and finally ZS6CN. He was a keen CW man and his many friends all over the world will miss him. Many hams, some from far afield attended the funeral service which was conducted by his old friend the Rev. Leo Alexander, ZS6BEN, so Shorty got a really good Ham send off, on his long journey. Good-bye Shorty, we shall remember you. To his wife, Joan and the family we offer our sympathy and condolences.

A Backward Look

Place: Bethlehem Aerodrome.
Occasion: First Governor Generals' Cup Air Race.
Time 0300 GMT.
Temperature 2 degrees below freezing.

OM Alf, ZS6AA and Shorty, ZS6CN, camped on the aerodrome complete with 5 watt transmitter (type 19's in the final), the night before the race. A plaintive voice, (Shortys') heard over the air, "What couldn't I do with a hot cup of coffee? My darn toes are frostbitten." Twenty minutes later a car came tearing up containing two sympathetic SW listeners plus half a gallon of steaming hot coffee!

THE QUALITY SIGNAL — A Non-electronics Way.

Leo Alexander, ZS6BEN.

Good meter and "scope" readings in your report does necessarily mean that you are broadcasting well. It is possible to have the best Tx in the world, but the O.M. using it is not making a good sound. Amateur Radio is not just concerned with that home-brew or commercial rig or antennae. It is a *means of communication* — it is concerned with the listener, in making communication with another honorable Ham. The Ham needs to be as good a broadcaster as he can be. Good operating includes your performance in front of the rig.

The things I notice as *bad operating* when sitting in front of my Rx are these: The OM who speaks too fast — like a talking teleprinter; who speaks in a single tone of voice — talking like a bad computer; who is very careless about the pronunciation of his words; who speaks so intimately to his microphone (i.e. mumbling to himself); or who shouts into it — giving distortion; or who speaks too far away from it; or who continually turns his head away from it when speaking; who (very rudely and without concern for his listener) coughs, sneezes, laughs raucously or makes unnecessary noises not needed for the mode of communication; who uses bad language — which includes bad English or Afrikaans; and who allows unnecessary background noises to be heard. And, of course, that over-modulation, which comes from turning up the audio high, which makes listening unpleasant.

May I make a plea to all amateurs to attempt these simple rules — to be better broadcaster, better communicators and be able to put out better quality signals?

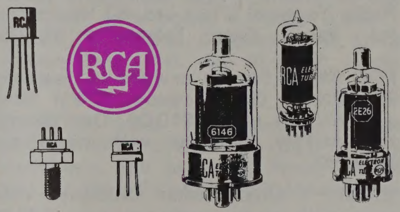
1. *Speak up* — at least so that a person sitting a yard away could comfortably hear you. This makes your voice more resonant.
2. *Speak reasonably slowly* — especially when working D.X., when conditions are not good, and when the other O.M. cannot speak English well. On that noisy "tagtig-meter band" too. The listener might hear you more easily.
3. You should always *enunciate every word carefully.* Accents do not matter. But words — every word should be most carefully pronounced, so that the listener has no difficulty in "reading" you.
4. Regarding microphones: Make sure that you have a good one that suits your voice. Address it properly. Find the correct distance from your mouth; do not scream into it; do not whisper into it. Speak up reasonably then there is no need to turn up the audio; *Respect your microphone* (and so your listener) by observing good manners — no coughing sneezing, belching, screaming, banging etc.
5. Remember you are *speaking to an honorable listener.* Respect him, honour him, treat him courteously. Remember your manners at all times (even when

provoked) and so never loose your temper, or say anything unkind, uncharitable or rude.

6. Please, and again I say unto you, *PLEASE,* keep those overs short. If you err in this way — buy an egg-timer and use that to time your overs. Three minutes an over should be sufficient. During nets — the briefer the over, the better. Even when there are only two in a QSO, make it snappy with the overs — I may want to break in! ! And you are expected to announce which stations are operating, frequently.
7. Let us *keep the humour flowing.* Our hobby should always be enjoyable — both to ourselves and to our listeners. Humour helps us to get to know one another and to build up a relationship of friendship. Enjoy having your leg pulled. Be generous when the other O.M. makes mistakes or is slow to comprehend what you consider basic operating procedure.
8. Please don't talk on a frequency when it is already being used. *Check your frequency before you call CQ.* A ham who causes QRM has the worst signal and no one wants to hear him.

So, OMs and XYLs and YLs please remember the listener. He's listening to you in preference to the professionals. Give him his worth. Keep to the Regulations, keep your humanity, your courtesy and respect for the listener. Let the ZS signals be known for the quality of good broadcasting.

73 es 88,
Six Blessed Ecclesiastical Natterer.



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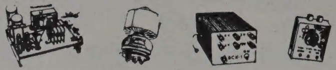

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